

# **N.C. Department of Information Technology Legislative Update**

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April 18, 2024

## Vision

Government that strategically leverages technology for an equitable, prosperous, healthier, and educated North Carolina.

## Mission

Enable trusted business-driven solutions that meet the needs of North Carolinians.

## Priorities

Broadband/Connectivity • Cybersecurity & Privacy • Digital Transformation

## Guiding Principles

Collaboration • Innovation & Creativity • Transparency • Accountability • Agility • Integrity • Customer Focused

# Statewide IT Strategic Plan

## Statewide Goals

### Foster a connected NC to improve opportunities and outcomes for all North Carolinians

- Provide resources to our partners in the private, not-for-profit, and public sectors to expand broadband and increase digital equity
- Collaborate with partners to establish guidance and policy to improve the digital landscape
- Develop better data mapping of served, unserved, and underserved populations
- Enhance 911 capabilities across the state
- Support improved health outcomes through the adoption of innovative technologies
- Improve access to online learning opportunities for all of NC's students while ensuring data privacy
- Foster and promote digital government

### Transform the delivery of services

- Enhance service management by improving transparency, and streamlining and securing day-to-day operations
- Adopt broker service model and supporting capabilities
- Improve our ability to forecast the needs of our customers
- Develop and implement a new funding model for IT in the state
- Develop scalable services that meet the current and emerging needs of our customers
- Invest in modern authentication services to support the state's current and future needs

### Optimize and secure the state's IT and application portfolios

- Leverage the Enterprise Portfolio Management Tool to identify technology convergence opportunities across the state
- Implement enterprise IT governance to optimize IT investments
- Develop a statewide resiliency and security plan for critical applications for all levels of government
- Make strategic decisions about our portfolio based on the needs of the business
- Modernize state infrastructure to broadly include cloud and on-demand models and supporting capabilities
- Develop an application modernization program

### Promote an inclusive and innovative workforce

- Attract, develop and retain a skilled and diverse workforce
- Establish a culture of empowerment and collaborative thinking
- Invest in people through increased training and education opportunities
- Develop and implement advancement opportunities for our employees
- Create a succession strategy for IT staff to ensure continuity of service across the enterprise
- Improve communication and transparency with employees

### Leverage data assets and analytics to further advance a data-driven government

- Execute enterprise data governance strategies to promote data sharing while ensuring data privacy and security
- Inventory and invest in critical data assets across the enterprise
- Advance the data integration and analytics program statewide
- Implement an enterprise data management program that addresses data standards, quality, and accessibility
- Expand the use of modern data visualization capabilities to measure performance and impacts

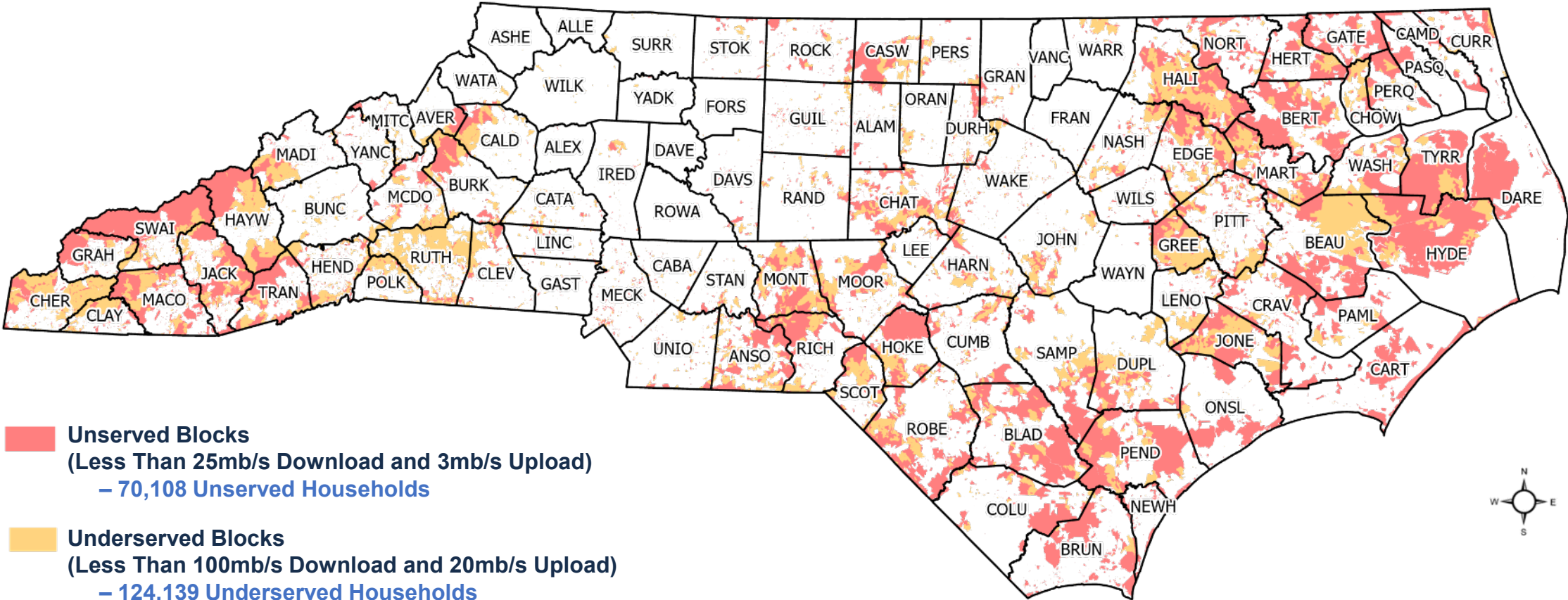
# Broadband Expansion



# North Carolina Broadband Profile

## Evolving Identification of Unserved Locations

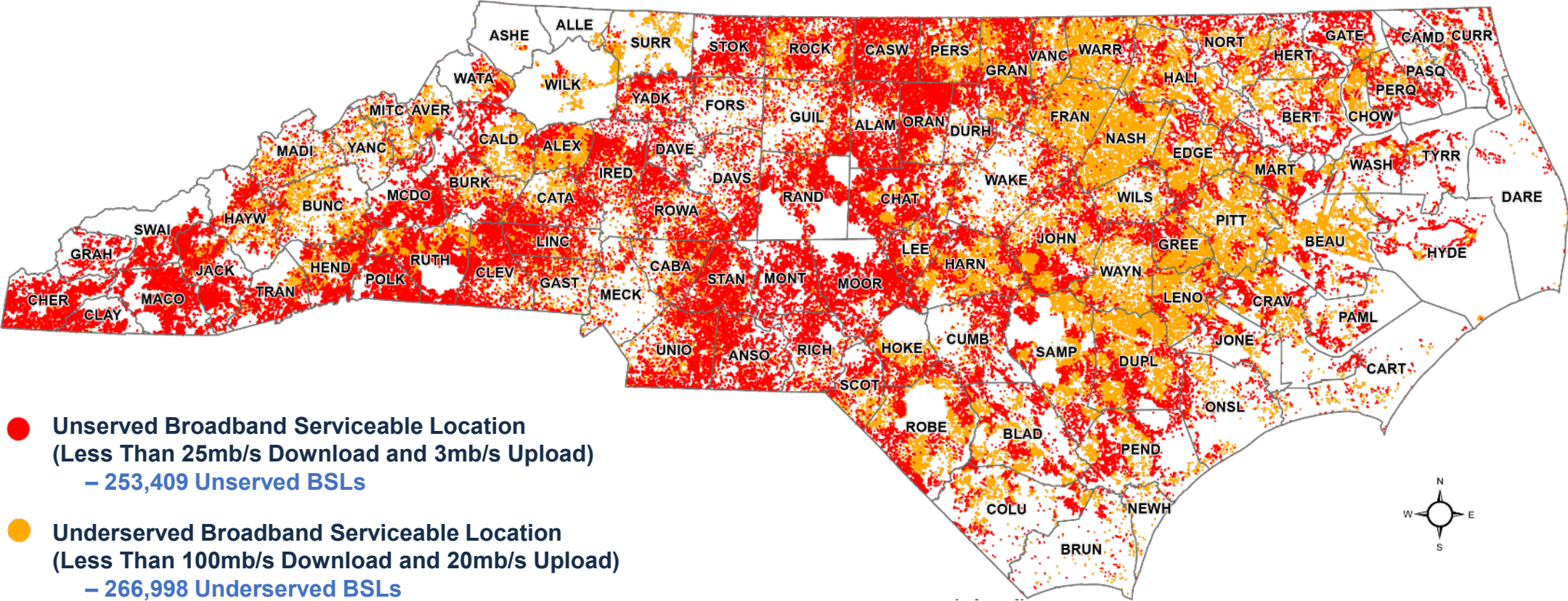
Form 477 – Census Block Level Reporting – December 2021



# North Carolina Broadband Profile

## Evolving Identification of Unserved Locations

Form 477 – Census Block Level Reporting – June 2022

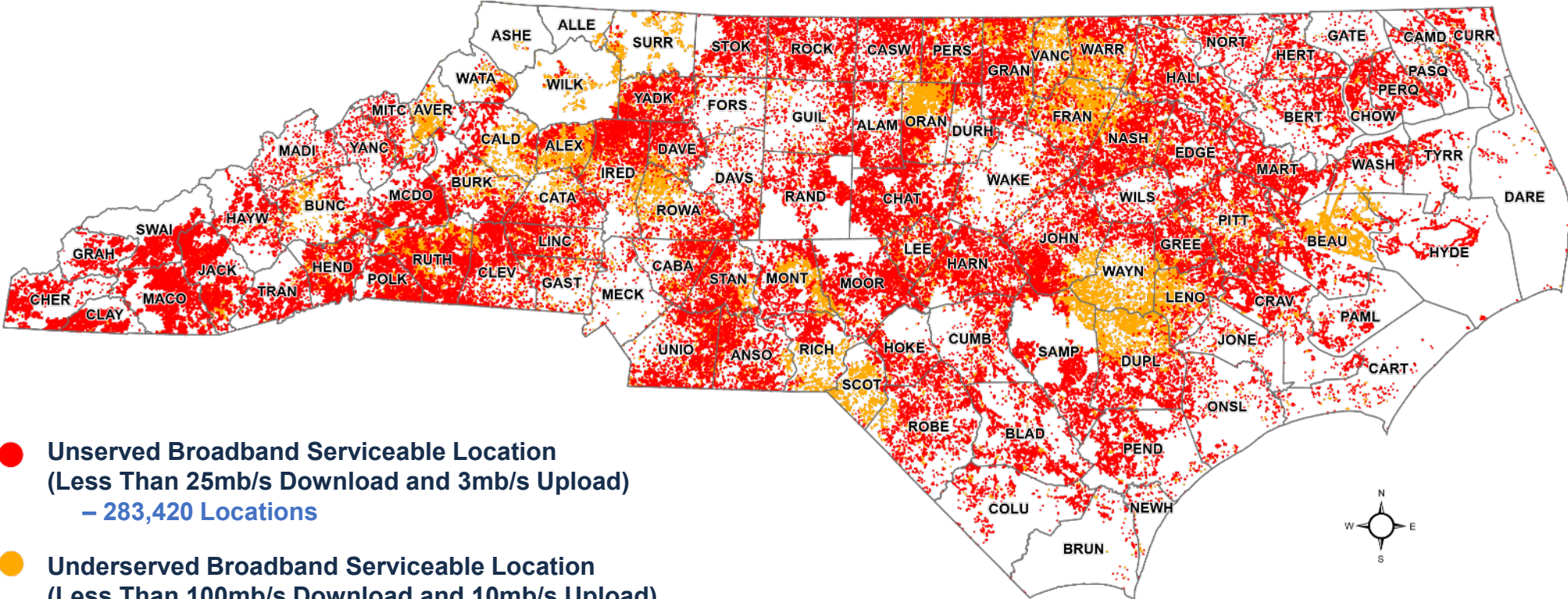




# North Carolina Broadband Profile

## Evolving Identification of Unserved Locations

Form 477 – Census Block Level Reporting – June 2022



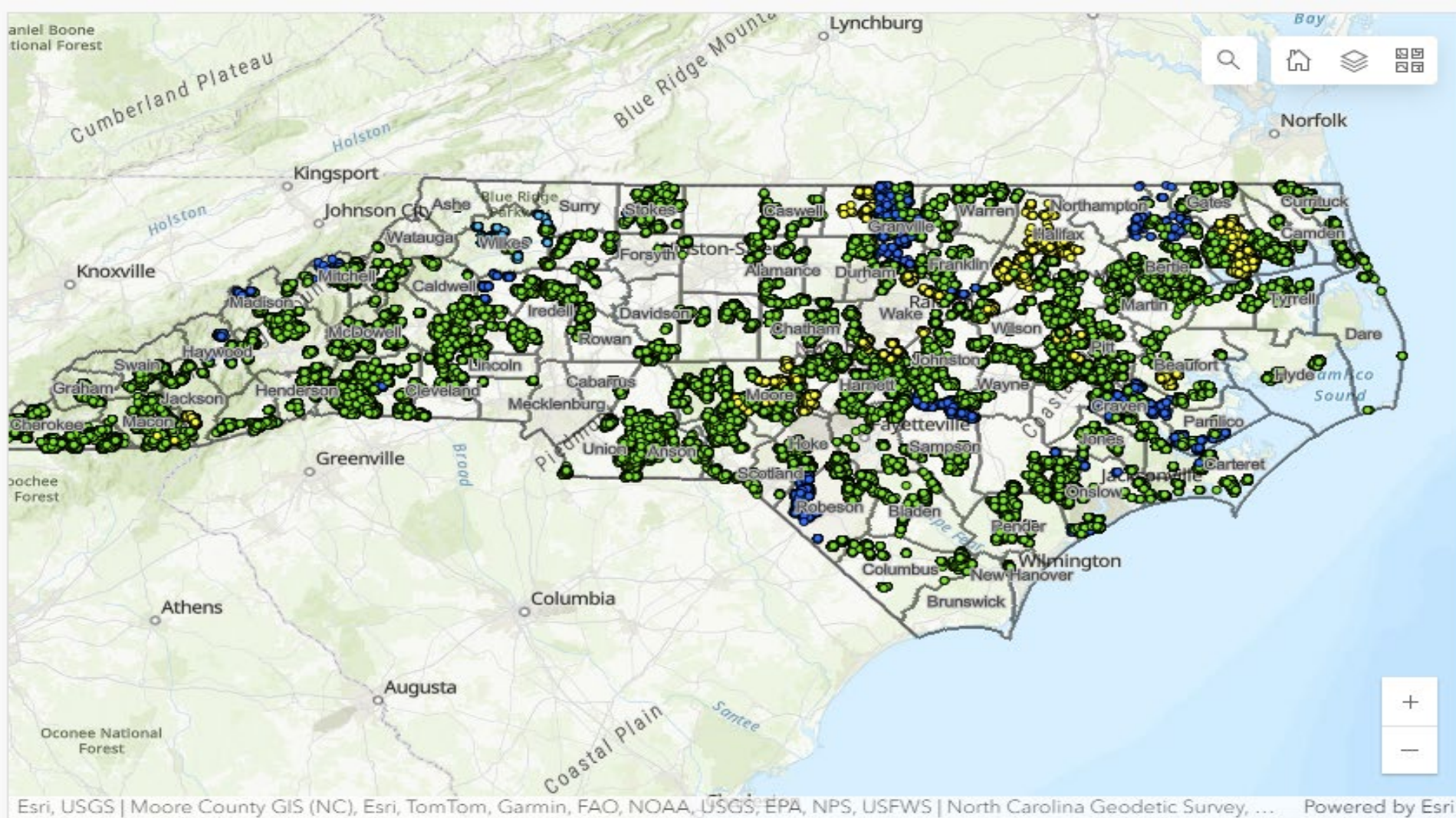
- **Unserved Broadband Serviceable Location**  
(Less Than 25mb/s Download and 3mb/s Upload)  
– 283,420 Locations
- **Underserved Broadband Serviceable Location**  
(Less Than 100mb/s Download and 10mb/s Upload)  
– 138,903 Locations





## NC Broadband Grant Addresses

- GREAT - Contracted Project
- GREAT - Contingent Project
- CAB - Contingent Project
- CAB - Contracted



Avg Cost Per Location  
**\$4.9k**

Total Project Cost  
**\$573M**

Total Grant Amount  
**\$372.9M**

Total Match Amount  
**\$200.1M**

Total Awarded Locations  
**150,325**

Households Served  
**145,708**

Businesses Served  
**4,617**

# ARPA Funding: Accomplishments

## **GREAT Grants → \$321M/350M awarded**

- 124/126 fully contracted; replacing 8 Zitel awards; 4 Cloudwyze awards from negotiated settlement

## **Completing Access to Broadband Program → \$27/400M awarded**

- ARPA State and Local Fiscal Recovery Funds and Capital Projects Funds
- Prequalified 41 internet providers to bid on county-specific projects

## **Broadband Pole Replacement Program → \$0/100M**

- Resolved U.S. Treasury issues; launched February
- 4 applications received; zero reimbursement requests so far

## **Digital Literacy → \$14M/50M awarded**

- Nearing award of remaining funds (230 applications requesting \$150 million)
- Digital Champion grant awards coming in May



# CAB Program/Next Steps

## Completing Access to Broadband program → \$27M/400M awarded

- 34 counties have committed to participate and provide local match required
- 25 county scopes posted for bids; responses due in May-June
- 9 more counties finalizing scopes of work
- Projected to award \$90 million by June based on counties with available matching funds
- ***Urgent need - remove county match requirement so we can maximize impact across all 100 counties and invest remaining funds***

## Stop-Gap Solutions → \$0/90M

- Fill in gaps once CAB awards are made starting in June

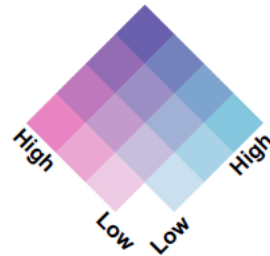
# County Broadband Profiles

## Defining Eligible Project Areas

<https://www.nconemap.gov/pages/broadband>

### FCC Reported Unserved Locations

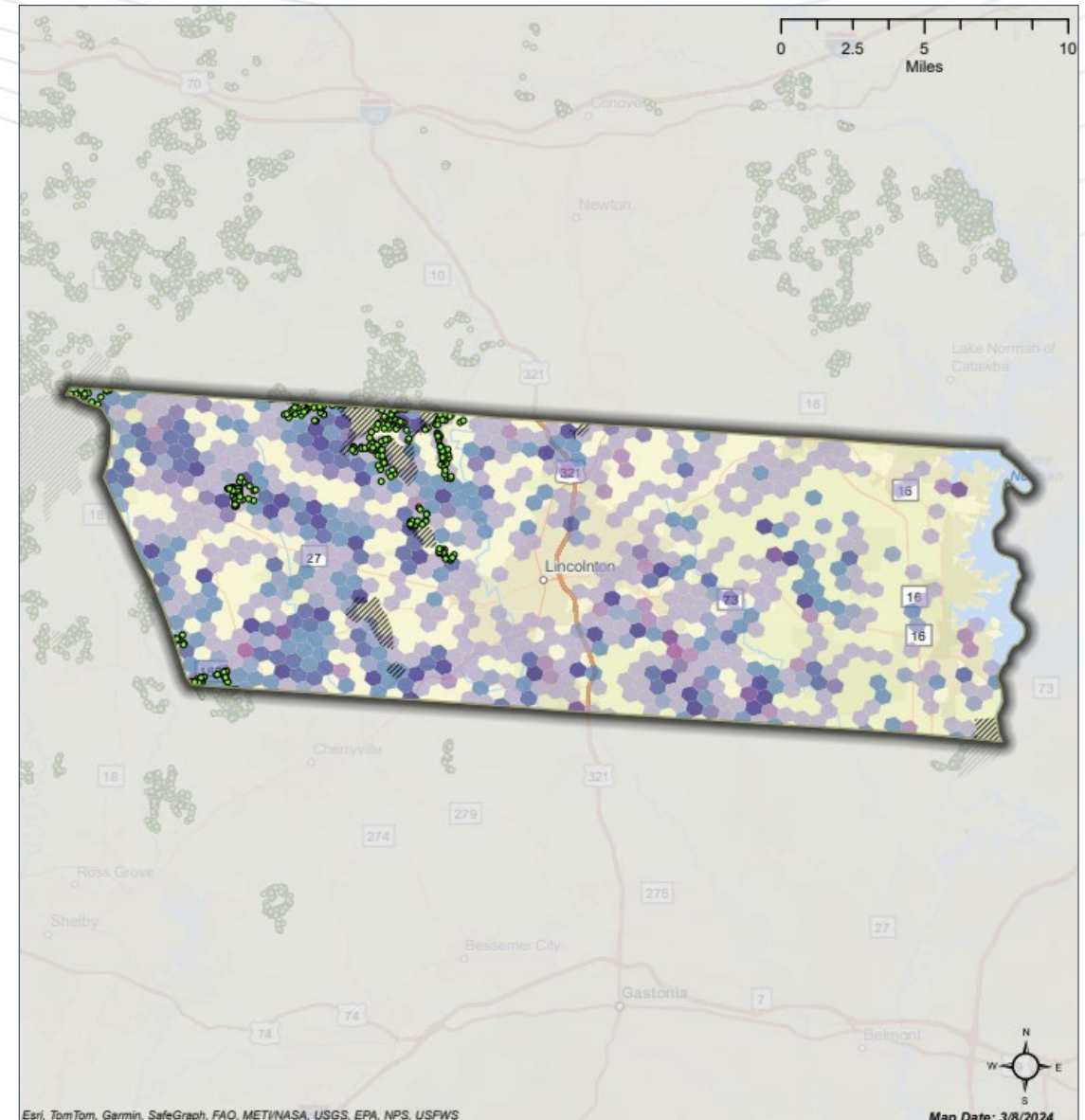
- Count of Unserved
- Percent Unserved



- ▲ NC Broadband Survey - Unserved Responses
- GREAT Contingent Award Locations (Federally Funded)
- GREAT Award Locations (State Funded)
- GREAT Award Areas (State Funded)
- ▨ Other Federal Grants

### County Profiles

Overviews of broadband service and funding for each county in North Carolina.





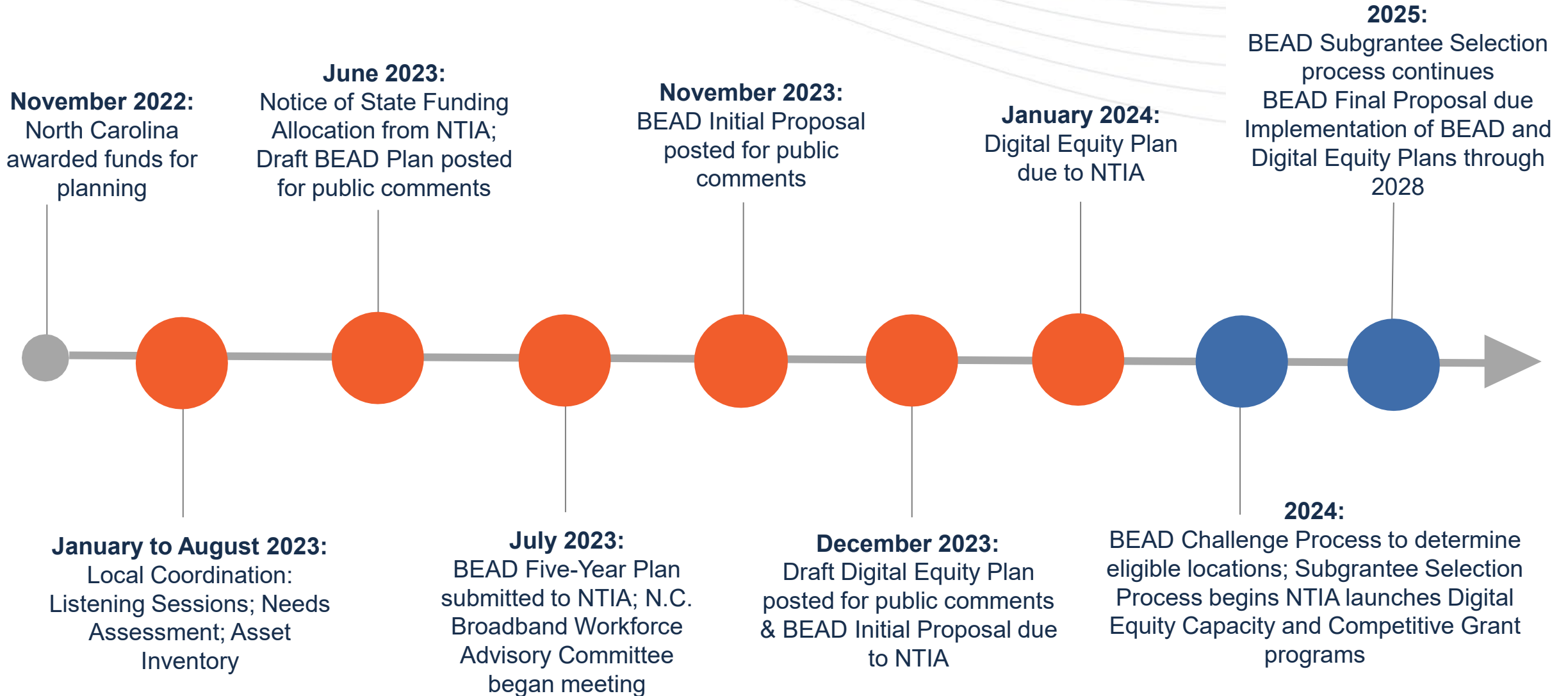
# Broadband Equity, Access, and Deployment (BEAD) Funding

**\$1.5 billion through the Bipartisan Infrastructure Law to make sure all North Carolinians can access reliable high-speed internet**

Eligible uses of funding include:

- Infrastructure for homes and businesses
- Upgrades to infrastructure for community anchor institutions
- Mapping and data collection
- Internet and Wi-Fi infrastructure for multi-family residential buildings
- Broadband adoption, including affordable internet capable devices and sign-up assistance
- Training and workforce development
- Digital equity programs

# BEAD and Digital Equity Timeline





# BEAD Initial Proposal (Submitted, Not Yet Approved)

- Includes two volumes submitted Dec. 22, 2023
  - [Volume 1 Draft](#)
  - [Volume 2 Draft](#)
  - [Workforce Development Draft Plan](#)
- NTIA “curing” process for BEAD Initial Proposal continues (likely until May); Updated versions will be posted online once NTIA approves them
- Challenge Process may not begin until Volume 1 is approved by NTIA

# Elements of Current Programs Aligned to BEAD Program

Elements of Current Programs	Alignment to GREAT Requirements	Alignment to CAB Requirements	Comments
Distribution tool	Yes	Somewhat	Grant program/procurement
Type of Awardee	Yes	Yes	Subgrantee/Contractor
Eligible Project	No	Possibly	GREAT has requirements for Tier/Rural Census Tracts and contiguous project area language; CAB project areas are within county boundaries
Deployment	Somewhat	Yes	All Last-Mile and Unserved/Underserved
Tech Type	Yes	Yes	Terrestrial/Prioritization for Fiber
Build-to Speeds	Yes	Yes	Minimum 100/20 Mbps
Locations to be Served	Yes	Yes	Unserved at 25/3 Mbps; underserved at 100/20 Mbps
Types of Locations	Yes	Yes	Households, Businesses, Community Anchor Institutions
Protest Process	Yes	Yes	Providers can only protest whether a location in an application is unserved or underserved in GREAT and CAB vs. multiple challenge options as part of BEAD
ACP	Yes	Yes	Affordable Connectivity Program required
Scoring	No	No	GREAT & CAB scoring matrices do not align to the BEAD scoring criteria or weighting
Other: Partnerships	No	No	Partnership language in GREAT for scoring and match requirement; Requirement for county match in CAB
Match Requirement	No	No	GREAT minimum 30%, CAB County Match, BEAD minimum 25%
Max Award Amount	No	No	GREAT \$4M/award; \$8M/county; Tier cap; CAB \$8M; BEAD none
Period to Build	No	No	GREAT 2 years CAB 2 years, BEAD 4 years



# Cost and Grant Estimates and Sensitivity Analysis: Connecting Unserved and Underserved Locations

External engineering cost analysis projects these deployment costs to serve eligible locations remaining after GREAT Grant awards and existing federal commitments (e.g., RDOF)

Deployment Cost	
Assuming expansion by adjacent operators and incumbent business case	\$1,865,000,000
Assuming construction and operation by start-up providers and no assumptions of adjacency	\$2,161,000,000

In addition, similar analysis estimates the cost to upgrade Community Anchor Institutions (1Gigabit symmetrical) to be approximately \$460 million.

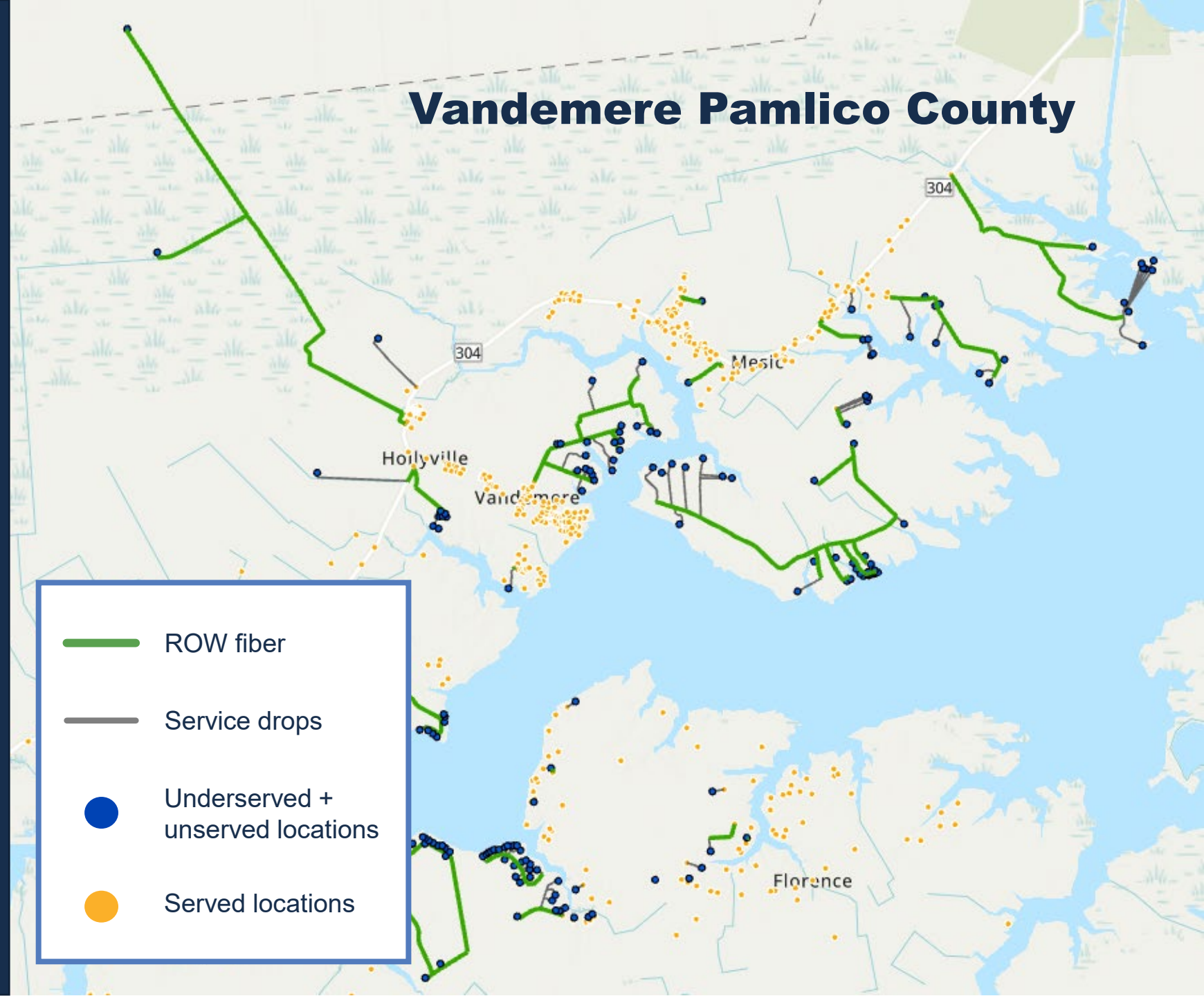
# GOeS designs optimal connections of locations to existing infrastructure

Map theory algorithm selects optimal fiber routes from served area to locations

Model adds service drops based on distance from road

Model includes full range of capital and operating costs

Cost inputs are based on consultant's engineering & operations experience, with state-specific local conditions



# Methodology

## Summary of the Data Collection & Analysis Processes

Use construction cost and financial model informed by industry standards, desk and field surveys, ISP input, and prior grant program data

Develop estimates based on a cost range of provider economics including telco upgrade, cable expansion and new startup

Create multiple network designs to reach all unserved and underserved units

Use construction cost and financial model informed by industry standards, desk and field surveys, ISP input, and prior grant program data

Generate cash flow statements for each analysis (bid) area

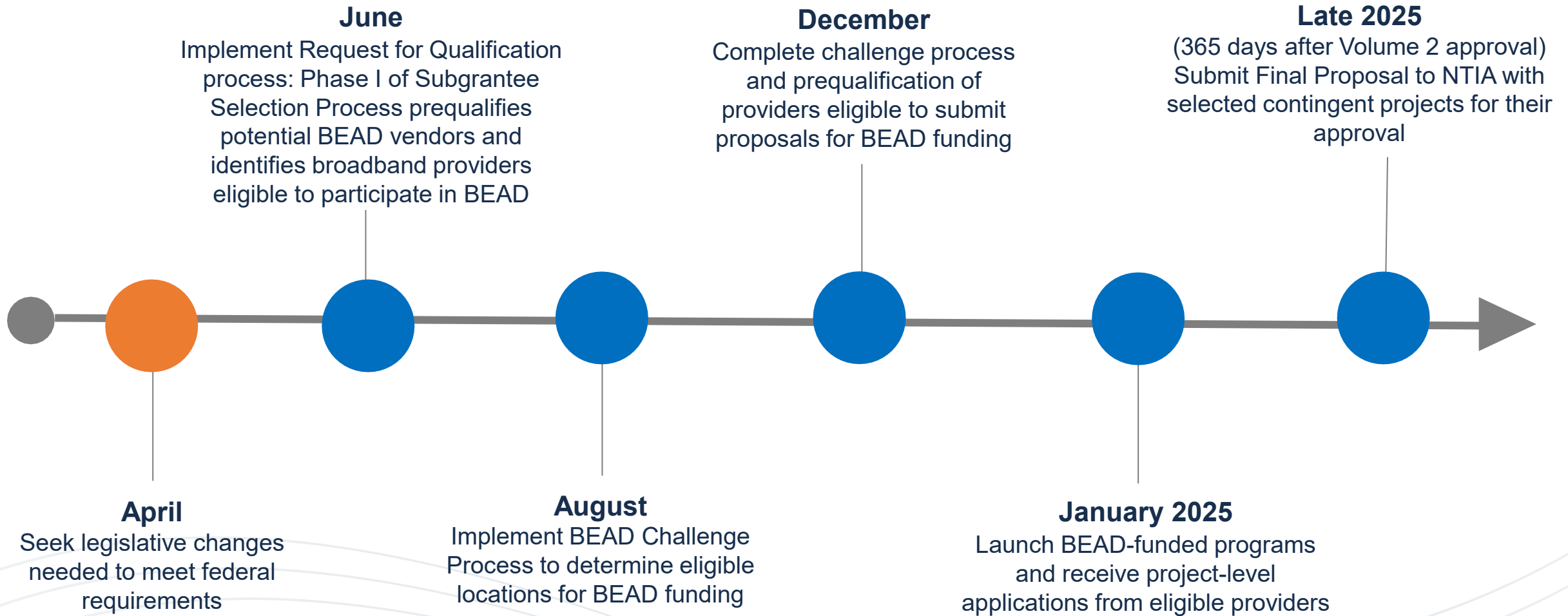
Assume take rate & ARPU based on typical values in unserved and underserved areas

Estimate industry bids (match)

BEAD funding for each area identify areas with less robust business cases to enable strategic aggregation for analysis purposes



# BEAD Implementation Timeline



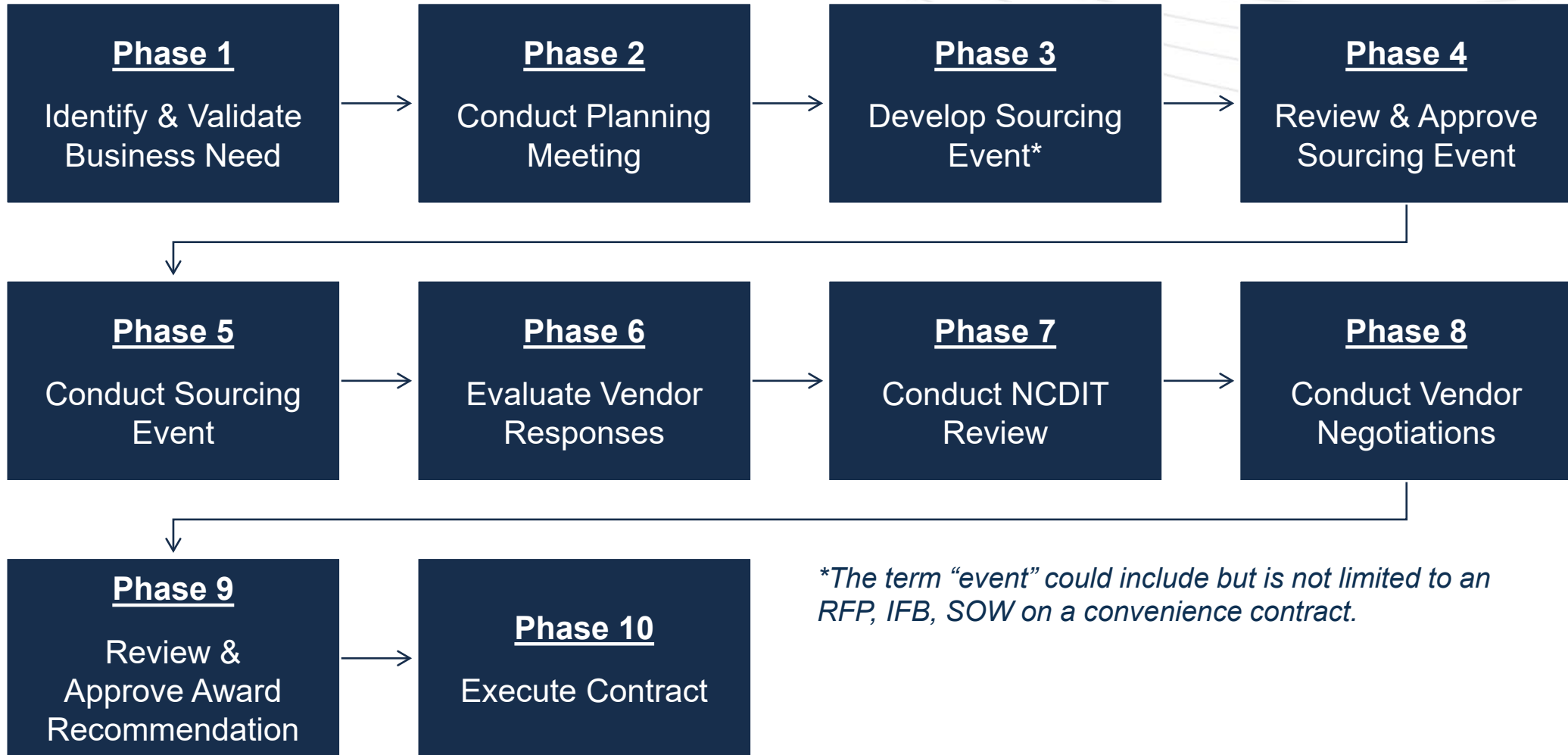
# Statewide IT Procurement

# Statewide IT Procurement Process Improvements

Average Days to Complete Procurement (by Type)			
Procurement Type	Historic Average Days to Complete	CY23 Average Days to Complete	% Reduction in Avg. Days to Complete
Amendment	34.0	28.7	19%
IFB	113.7	97.6	16%
RFP	311.4	205.5	52%
RFQ	92.1	89.7	3%
SOW	46.6	33.3	40%



# Statewide IT Procurement Process



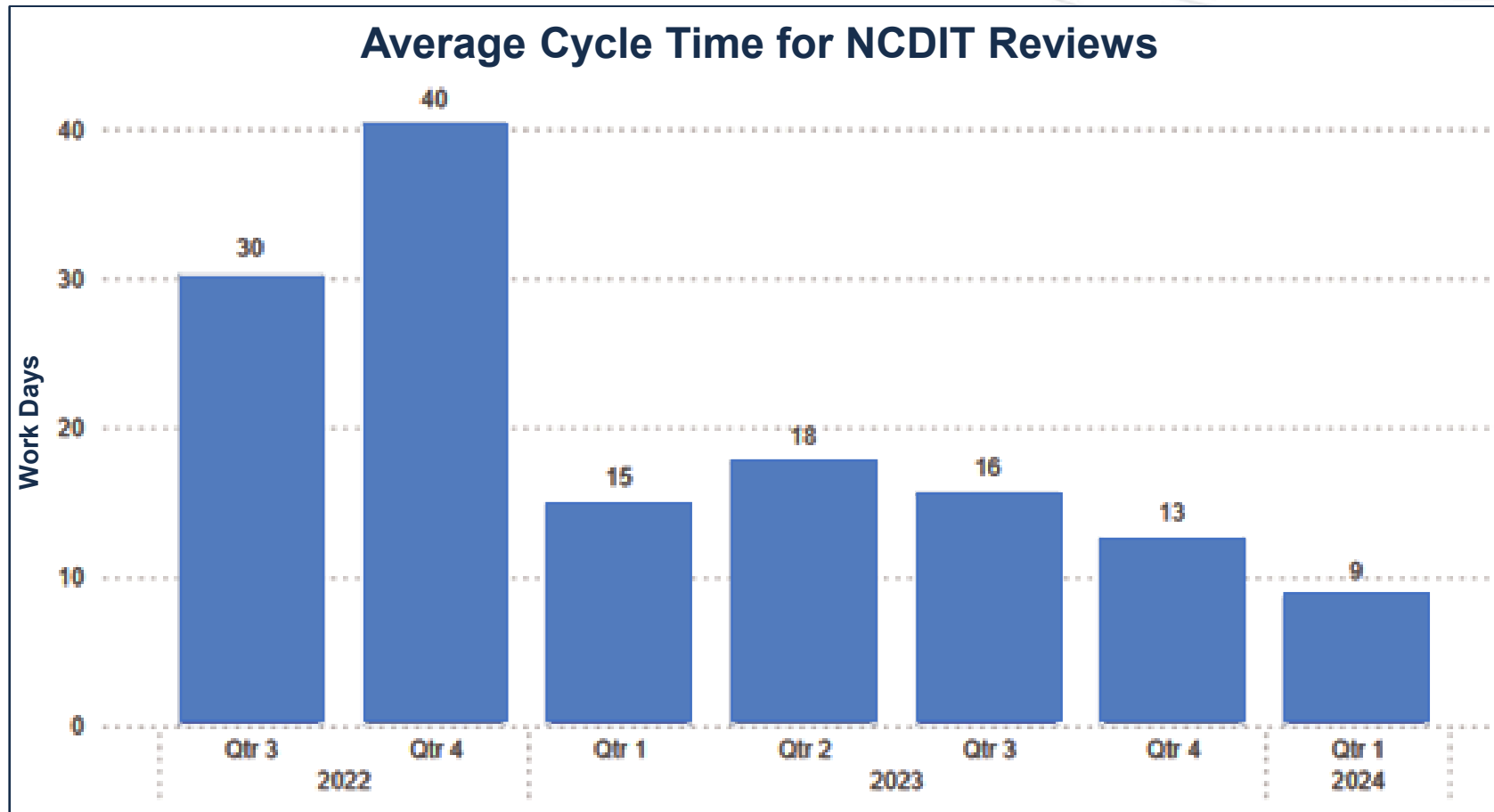
*\*The term “event” could include but is not limited to an RFP, IFB, SOW on a convenience contract.*

# Importance of NCDIT Reviews of IT Procurements

Threat actors only have to be right once. We must be right every time.

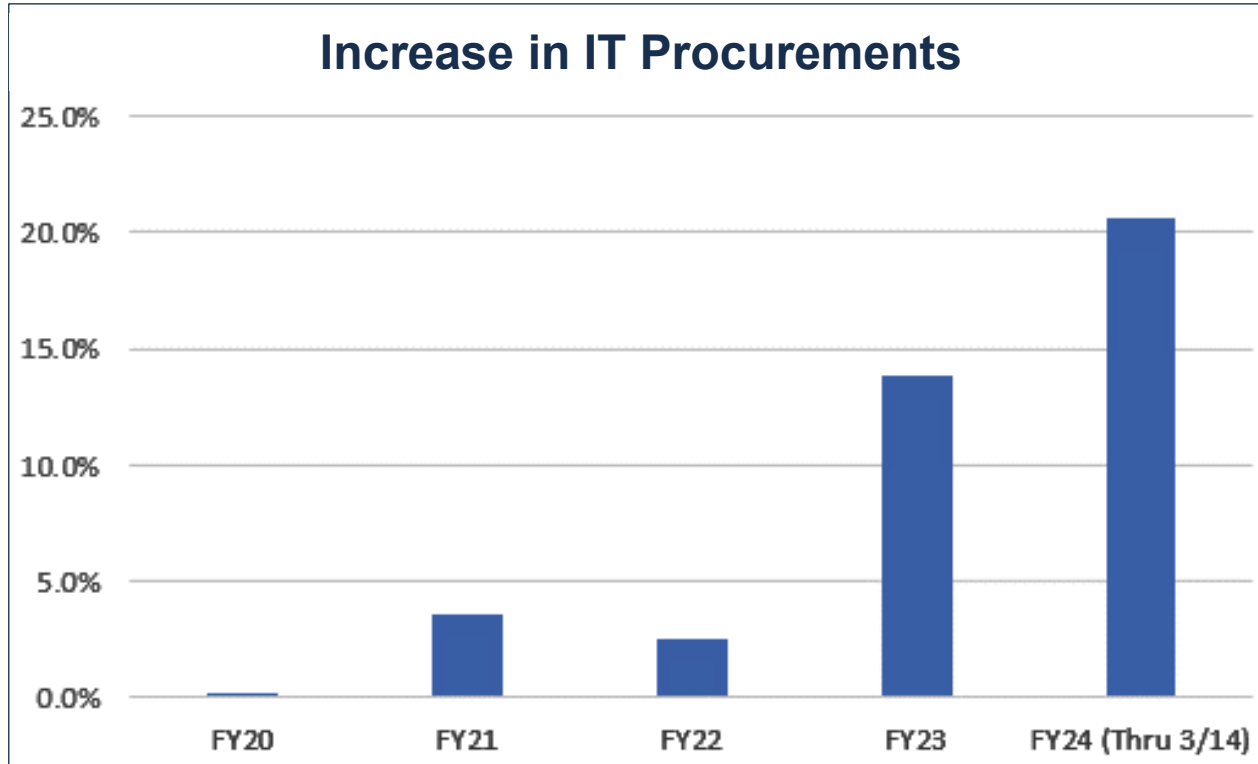
- NCDIT was created to provide enterprise perspective and subject matter expertise
- Key reviews (Steps 1, 4 and 7): [§143B-1340 through 1376]
  - **Project management** – Ensures wise spending of taxpayers' money
  - **Enterprise Architecture** – Ensures that projects align with Statewide IT Strategic Plan
  - **Cybersecurity** – Ensures that the entire state system is secure
  - **Privacy, legal, etc.** – Identifies risks, protects the state's data and systems

# Statewide IT Procurement Process Improvements





# Statewide IT Procurement Process Improvements



- Achieved steady decline in review/cycle times while seeing increase in procurements
- Will see continued increase in procurements as agencies modernize

Status	Total
Past Target	99
No Target	79
On Schedule	22
At Risk	2
<b>Total</b>	<b>202</b>

Project Details

Clear all slicers

**Project Id Search**

All

**Project Name Search**

All

**Organization**

All

**Solicitation Vehicle**

All

Active

Cancelled

Completed

Project Id	Project Name	Agency		Step 01 Target Completion Date for Approval of IT Procurement Intake Form	Step 03 Target Completion Date for Agency Approval of Draft Solicitation Document	Step 04 Target Completion Date for NCDIT Approval of Solicitation Document and Sourcing Event	Step 05 Target Completion Date for Open Vendor Responses to Sourcing Event After Response Submission Deadline	Agency Evaluation and Review
WS1060026342		DPI-Department of Public Instruction	Target	4/12/2024	5/10/2024	7/5/2024	7/26/2024	10/25/2024
			Actual	4/12/2024				
WS1059882469		DPI-Department of Public Instruction	Target	4/12/2024	5/10/2024	7/5/2024	7/26/2024	10/25/2024
			Actual	4/12/2024	4/3/2024			
WS1059836585		DPI-Department of Public Instruction	Target	4/12/2024	5/10/2024	7/5/2024	7/26/2024	10/25/2024
			Actual	4/12/2024				
WS1023623842		DHHS-NC Health & Human Services	Target			4/5/2024	5/3/2024	8/9/2024
			Actual	3/1/2024	3/3/2024	3/11/2024	3/28/2024	
WS1019271500		DHHS-Division of Public Health	Target		3/6/2024	5/1/2024	5/22/2024	8/21/2024
			Actual	3/1/2024	3/10/2024	3/21/2024		
WS1018144052		DHHS-NC Health & Human Services	Target			4/4/2024	4/25/2024	7/25/2024
			Actual	3/1/2024	3/3/2024	3/11/2024	3/25/2024	
WS1016216104		DHHS-Division of Mental Health & Substance Abuse Services	Target	3/4/2024	3/29/2024	5/24/2024	6/14/2024	9/13/2024
			Actual	3/4/2024	2/26/2024	4/1/2024		
WS1013364098		DPS-Department of Public Safety	Target			3/30/2024	4/21/2024	7/21/2024
			Actual	3/22/2024	2/19/2024	3/22/2024	3/13/2024	
WS1009165465		DHHS-NC Health & Human Services	Target	2/16/2024	3/15/2024	5/10/2024	5/31/2024	8/30/2024
			Actual	2/16/2024	4/10/2024			

**Green Shading** indicates that the "Actual" completion date was on or before the "Target" completion date

**Orange Shading** indicates that the "Actual" completion date is after the "Target" completion date

**Yellow Shading** indicates that no "Actual" completion date is available and the "Target" completion date is within 5 working days from the current date

**Red Shading** indicates that no "Actual" completion date is available and the "Target" completion date is before the current date

No Color Shading indicates that no "Actual" completion date is available and the "Target" completion date is more than 5 working days from the current date or there is no "Target" completion date

**Project Name Search**

All

**State**

All

**Organization**

All

**Project Id Search**

All

**Solicitation Vehicle**

Multiple selections

**Project Start Date**

9/13/2022 4/16/2024

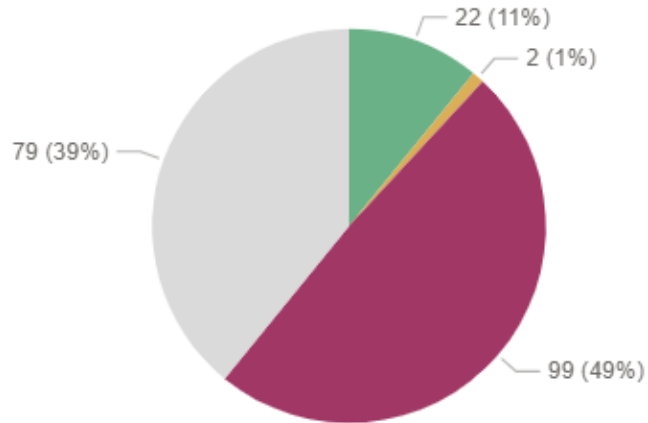
State	Total
Active	202
Cancelled	92
Completed	78
<b>Total</b>	<b>372</b>

Project Details

Target Date Details

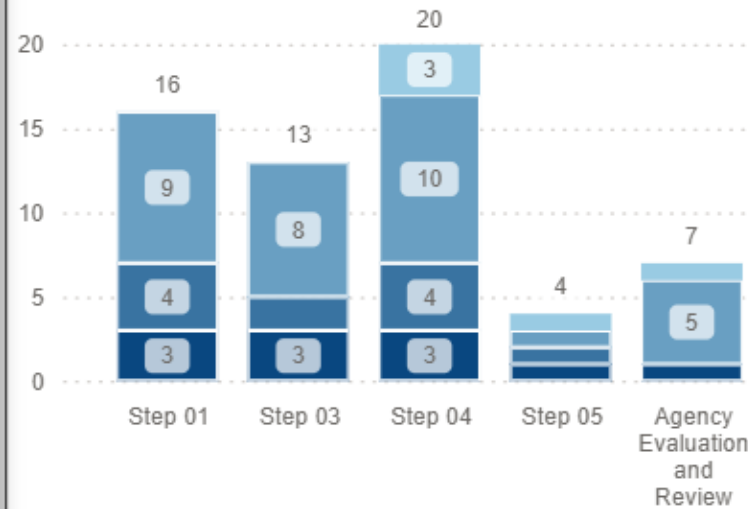
**Active by Status**

Status ● On Schedule ● At Risk ● Past Target ● No Target



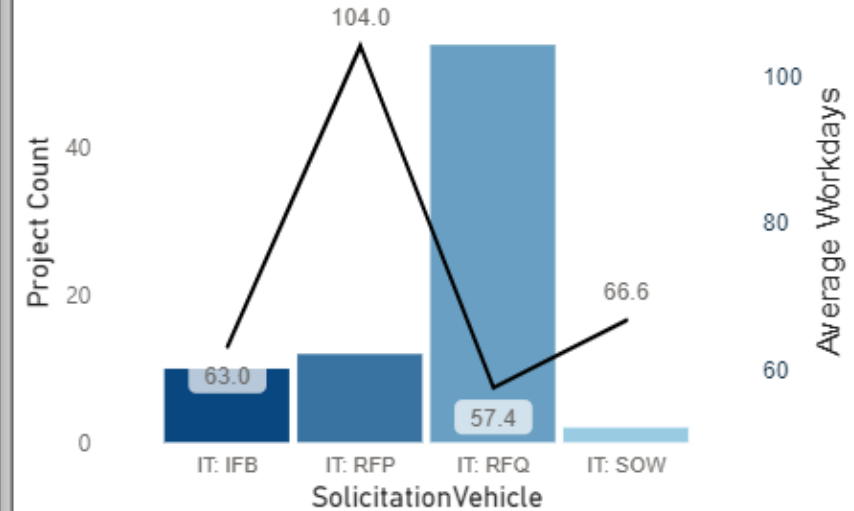
**Cancelled (Last Active Step)**

● IT: IFB ● IT: RFP ● IT: RFQ ● IT: SOW



**Completed (Average Workdays)**

● Project Count ● Average Work Days (Start to Last Completed)



# Statewide IT Procurement – Where We Are Now

- Implemented new integrated data analytics dashboard reporting system
- Established Procurement Guidance Team to help agencies through the process
- Automation of manual, repetitive tasks that consume resources
  - Recently launched a modern chatbot to help answer customers' questions
  - Automated 3 businesses processes



# Statewide IT Procurement – Where We Are Now

- Education and outreach
  - Stood up training team
  - Distribute Statewide IT Procurement newsletter monthly
  - PEAK conference
  - NC TECH vendor meeting (April 23)
  - HUB IT Vendor Day (May 2)
  - Procurement Boot Camp (July)
- **Culture of continuous improvement**

# Looking Ahead

- Additional business processes have been identified for automation
  - Working to implement 9 more workflow accelerators
  - Will further Statewide IT Procurement staff's ability to focus on strategy
    - Example: Negotiated \$118.5M of additional savings for state agencies, community colleges, local municipalities and other government entities by negotiating large volume contracts.
- **Do not want to slow down as procurements are increasing**
- NCDIT is adding capacity to meet the growing IT procurement demands — critical for state's cybersecurity posture and interests.

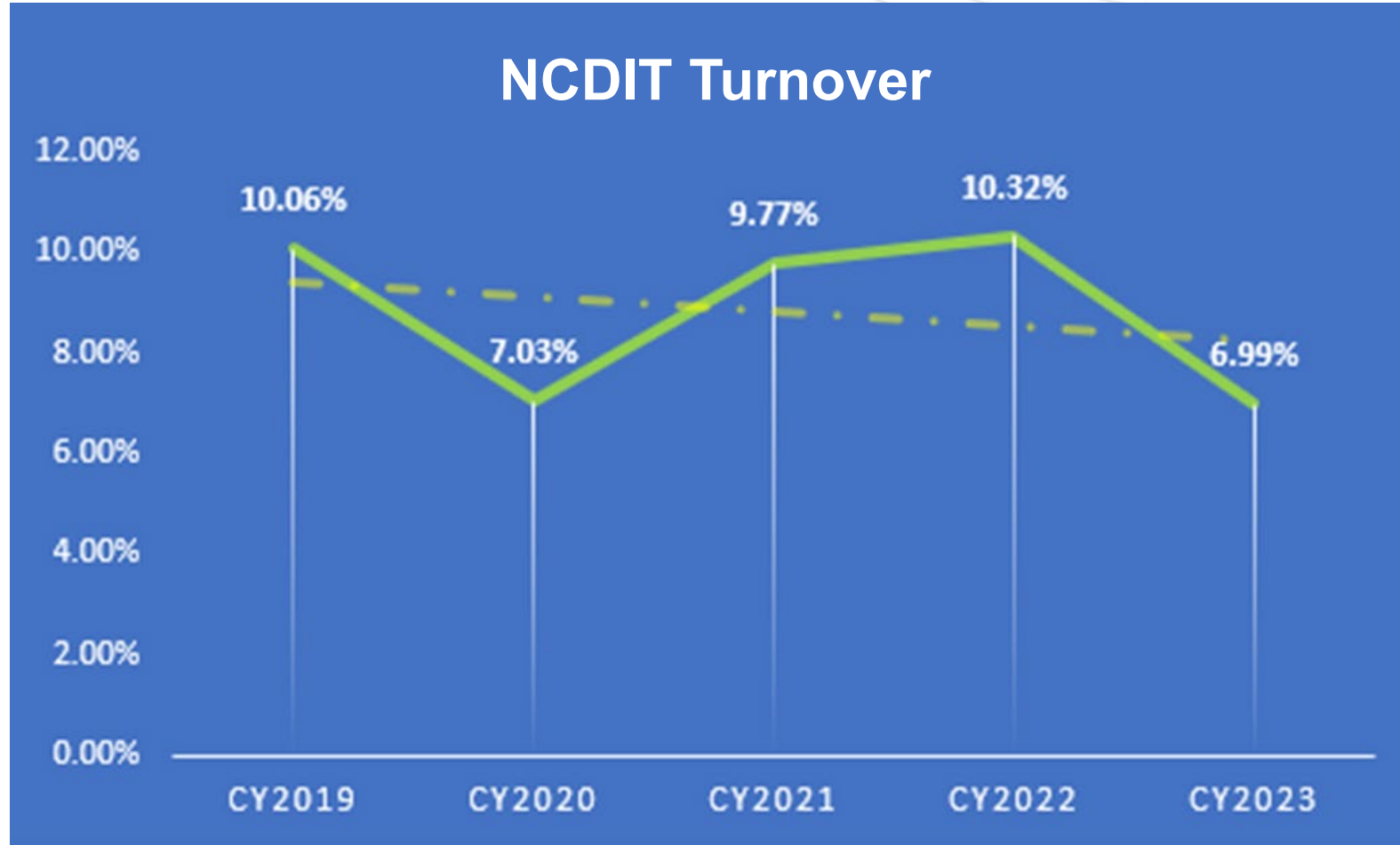
# NCDIT Workforce

# Vacancies (as of April 17, 2024)

- Overall agency vacancies – 166 (12.3% of 1,354)
  - 54% are NCDIT Central
  - 46% are Optimized Agencies (DOA/DMVA, DEQ, DNCR, DPS/DAC, DOT)
    - Positions are funded by perspective agencies (corresponding lapsed salaries stay with the perspective agencies)
    - Cannot be used elsewhere
- Challenges:
  - Highly competitive IT-related job market
  - Development of Classifications
  - Retirement eligibility
- In addition to recruitment, we are also focusing efforts on reducing turnover rate



# Investing in Employees



# Investing in Employees - Retention Efforts

- Offer robust remote work program
  - 61% of employees have full-time remote work privileges; 22% have hybrid
- Leveraged retention bonuses to address 20% or greater turnover across 29 position classifications
- Addressing salary equity as funding is available
  - 74% of employee salaries are at or above the midpoint (market rate) of their position classification.
- Providing professional development opportunities for technical, organizational and leadership skills in addition to OSHR-provided training
  - Employees required to take at least 36 hours of professional development each year (NCVIP goal)

# Building a Talent Pipeline

- Student outreach program to grow awareness of middle and high school students of IT-related opportunities in state government
- Currently have 16 paid year-round internships to reach non-traditional candidates
  - Have hired 2 into full-time positions to date
  - Working to increase number of available internships

# Building a Talent Pipeline

- Established apprenticeship program in partnership with ApprenticeshipNC and N.C. Community Colleges System for future technologists in cybersecurity, networking and user support
  - One cybersecurity apprentice has started; expect to have second cybersecurity apprentice as well as networking apprentice on board soon.







# Twisted Pair Cables

## Cat 6/6a

### Category 6

- 4 twisted pairs with a divider to separate pairs, and like Cat5, Cat6 cables consist of four twisted pairs of copper wires. However, they have an even tighter twisting to minimize interference.
- Designed to restrict bleeding of signal between pairs (less "noise" to negotiate in equipment).
- Can support data transmission speeds of up to 10 Gbps over short distances (up to 55 meters or 180 feet) and 1 Gbps over longer distances (up to 100 meters or 328 feet). It has become the standard for nearly all commercial and residential network cabling.
- Cat6 has a bandwidth of 250 MHz.
- Shielded versions help protect signal from EMI and RFI. Have become standard for Wi-Fi and AV installations that require high data rates and very low tolerance for transmission errors.

### Category 6a

This cable has the same attributes as Cat6 as well as the following:

- It has an even tighter twist on the wires. 6A adds two more twists than Cat6.
- Cat6a has a bandwidth of 500 MHz. This means that Cat6a can support data transfer rates that are twice as fast as Cat6.



CAT 6 CABLE VS CAT 6A CABLE

**NCDIT** NETWORKS AND COMMUNICATIONS TECHNOLOGY







IT LEADERSHIP FORUM







Joseph  
Ray Harrison





QUALITY

CREDIBILITY

CONTINUITY

SCALABILITY

NECESSITY

EQUITABLE

ADDOIT

EXPEDITE

UNITED





# Update on New Positions

- 3 new time-limited positions funded under the Health Information Exchange Authority to extend funding for 3 existing time-limited positions
  - New positions have been filled and former positions abolished
- 5 new positions for Chief Privacy Office
  - 2 positions have been established and filled – Deputy Chief Privacy Officer started April 15; Special Advisor starts May 13
  - Other positions to be defined after deputy and special advisor start
- 12 new positions for Enterprise Security and Risk Management Office
  - Will be posted by June 30



Questions?